Journal of Optical Technology (A Translation of Opticheskii Zhurnal) 2012 vol.79 N4, pages 226-231

Space-time structure of gas flows and temperature fields in an inductively coupled plasma

Nagulin K., Ibragimov R., Zivilskii I., Gilmutdinov A.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

The key gas-dynamic characteristics of an inductively coupled plasma have been modelled and experimentally certified, using an original diagnostic complex. The processes of ignition and steady-state burning of the plasma are considered. Such effects as the formation of plasma clusters, plasma pulsations, and rotation of the plasma jet are detected, experimentally confirmed, and interpreted. The results of the model calculations agree well with the resulting experimental data of schlieren measurements.

http://dx.doi.org/10.1364/JOT.79.000226